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Mannich Reaction Catalyzed by Basic Functionalized Ionic Liquid

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Abstract: Three-component Mannich reaction of cyclohexanone, aromatic aldehydes and aromatic amines catalyzed by a basic functionalized ionic liquid, 1-butyl-3-methylimidazolium hydroxide ([bmim]OH), was investigated. Under the optimum reaction conditions as $n(\text{cyclohexanone}) : n(\text{aromatic aldehydes}) : n(\text{aromatic amines}) : n([\text{bmim}]\text{OH}) = 1 : 1 : 1 : 0.1$, and at room temperature for 10 h with $\text{CH}_3\text{CH}_2\text{OH}$ as a solvent, the yields of β -amino ketones was obtained with 75% – 91%. The factors influencing the Mannich reaction were discussed including solvents, the structure of aldehydes and amines. The ionic liquid, which is environment friendly, was recycled at least 5 times without significant loss of activity.

Keywords: organic chemistry; functionalized ionic liquid; Mannich reaction; catalyze; β -amino ketone



会议信息(一)

第 14 届全国化学热力学和热分析学术会议

会议主题: 会议将集中展现我国近两年来在化学热力学和热分析领域的主要研究成果。

会议内容: 1. 溶液化学; 2. 化学、化工热力学与热力学教育; 3. POPs 热化学及其应用; 4. 热分析及其应用; 5. 材料热力学; 6. 生物热力学; 7. 表面和胶体热力学; 8. 相平衡和分离技术; 9. 统计热力学和计算机模拟; 10. 仪器和方法。

承办单位: 中国科学院大连化学物理研究所 时间: 5月21日 – 25日 地点: 辽宁省大连市

联系人: 孙立贤(大连市中山路457号中科院大连化学物理研究所, 116023)

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第 10 届全国量子化学会议

会议主题: 量子化学、理论动力学和统计力学的新方法和应用

会议内容: 1. 近年来理论化学基础理论和计算方法的新进展; 2. 理论与计算化学在化学、材料和生命科学中的应用。

承办单位: 南京大学化学化工学院 时间: 5月30日 – 6月2日 地点: 江苏省南京市

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